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A WEEKLY EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(427) Acute Pulmonary Congestion of a Pseudo-pleuritic Type.

M. BERTHIER (*Revue de Médecine*, April, 1891) says there is a form of pneumonia which gives the signs of pleural effusion, namely, complete dulness on percussion and absence of vocal vibrations and breath sounds. It has been termed by Professor Grancher "*pneumonie massive.*" The ramifications of the bronchial tubes up to the larger divisions are filled with exudation. M. Grancher has also described another form which yields similar physical signs, and which he has named "*spléno-pneumonie.*" He supposes it to be due to a sero-albuminous and epithelial inflammation. M. Berthier then reports a case occurring in a young man after influenza. There were signs of fluid at the left base, but exploration with the needle was negative. The expectoration consisted at first of pure blood. On the fourth day the patient became much worse; he was cyanosed. Similar signs were found at the right base, with bronchial breathing and bronchophony at the angle of the scapula. Later, friction sounds were heard over the subspinous fossa, first on the right and later on the left side. The patient was discharged well in six weeks' time. M. Berthier remarks that the "congestion" was very intense in this patient; the parenchyma of the lung was infiltrated with blood, as also the smaller tubes. During the last epidemic of influenza, cases of pulmonary congestion—and that, too, of a peculiar kind—were frequent. Dry pleurisy was also a common complication.

(428) A Test for Acetone in Expired Air.

THE presence of acetone in the breath is generally detected by its special odour, which is compared by various authors to that of wine, chloroform, ether, etc. No recent publications, however, describe any method for the chemical demonstration of its presence. Professor De Renzi (*Riforma Medica*, April 25th, 1891) gives a simple method of estimating qualitatively, and to some extent quantitatively, the amount of acetone contained in the aqueous vapour condensed from expired air. His apparatus is very simple—a small thin-walled bottle fitted with an india-rubber cork through which pass two tubes. This bottle is placed either on ice or in a freezing mixture, and the patient allows the expired air to pass into it through one of the tubes. A few minutes are sufficient to collect enough liquid for examination. The test applied is that of Lieben, which consists in the formation of iodoform by treating the liquid with caustic potash and solution of iodine in potassium iodide. If the precipitate be heated on a water bath the iodoform will be volatilised and be deposited in crystalline form on the cool parts of the apparatus. A solution which contains only 0.01 milligramme of acetone will give the precipitate of iodoform in from one to three minutes. A stronger solution will give the reaction immediately on adding the reagents. It will be easily seen that the same method may be made to yield quantitative results. In order to estimate acetone in the urine, it is necessary to distill off the aqueous portion, as the reaction will not take place in presence of the urinary salts. This operation is both tedious and unpleasant, and the author is of opinion that examination of the breath as above described will be sufficient, in a case of acetonæmia, to detect the presence of acetone. He has found, too, that in slight cases it is possible to obtain the iodoform reaction from the breath, when examination of the urine yields only a negative result. It may be mentioned, in conclusion, that the breath in health never contains acetone, and application of the test will not give the faintest trace of iodoform.

SURGERY.

(429) Nephrectomy in Cases of Ruptured Kidney.

IN a lecture on modern renal surgery (*Sammlung klinischer Vorträge*, No. 16, New Series) Dr. A. Obalinski, of Cracow, reports a case in which he removed a ruptured kidney, with good results. The patient was a cavalry officer, aged 32, who on September 21st had, in a fall from his horse, been struck with much violence on the right side of the abdomen. This injury was followed at first by much shock, extreme tenderness and bruising in the right lumbar region, and intermittent hæmaturia, and, on the ninth day, by the appearance in the right hypochondrium of a tender, circumscribed, and fluctuating tumour of the size of a child's head. As the tumour increased in volume and was associated with much general disturbance, though not with any indications of suppuration, Obalinski decided on performing a radical operation, and on October 23rd exposed the injured kidney by the lumbar and extraperitoneal incision. The kidney, which had been completely severed in two, was enclosed in a large cavity and surrounded by a large quantity of clear healthy urine and some small blood clots. After removal of the fragments of kidney and ligature of the pedicle and of all bleeding vessels, the large wound was plugged with strips of iodoform gauze, and

drained by means of the ligatures and one piece of the dressing. The patient made a good recovery, and was regarded as quite cured on December 20th. In some subsequent remarks on the treatment of ruptured kidney, Obalinski states that when such injury results in the formation of a fluctuating tumour, it is better, if preliminary puncture be thought necessary, to aspirate the swelling with Dieulafoy's apparatus than to withdraw a small quantity of fluid by the ordinary exploring syringe. By means of the former a large quantity of fluid can be removed and much relief thus afforded. Moreover, there is just a chance of one or more aspirations being followed by a permanent cure. The early disappearance in this case of blood in the urine, and the very scanty effusion of blood about the lacerated kidney are supposed to have been due to the speedy accumulation of effused urine at the seat of injury and to the compression exerted by this fluid, confined as it was within a sac, on the ureter and the renal blood vessels. The supposition that the wall of the large sac found in Obalinski's patient was formed by the fatty capsule of the kidney is favoured by the results of some experiments made on the cadaver by Professor Teichmann, who found that by the slow injection of fluid this structure could be elevated so as to form a strong and impenetrable membrane. If this as well as the peritoneum remain intact, effusion of blood and urine will be much restricted, and the prognosis of the case rendered less unfavourable. Obalinski is opposed to those surgeons who hold that in the case of a slowly developing tumour after injury to the kidney, a cutting operation should be deferred until the occurrence of unmistakable symptoms of suppuration. Statistics show that in most instances of this kind the conditions are very unfavourable for successful surgical interference, and that help comes too late. The most promising treatment of ruptured kidney with effusion of urine, it is held, is to aspirate the tumour and to remove as much as possible of the effused fluid, and, if the swelling should again present itself, to delay no longer in resorting to lumbar incision and, if it be found necessary, removal of the injured kidney. In a case of rapidly formed tumour after injury to the kidney in which there is much blood in the urine together with other indications of profuse bleeding, Obalinski would at once expose the kidney by performing laparotomy. The peritoneum under such circumstances would very probably be found wounded, and as there has been no time for this membrane to become infected, the abdominal cavity may be washed out with good prospects of success. Obalinski has found reports of six other cases of nephrectomy for ruptured kidney, in three of which the operation was completely successful, whilst in the other three it was followed by a fatal result.

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(430) Recovery after Pylorectomy.

Coley (*New York Medical Journal*, April 18th, 1891, p. 445), describes a case of this nature. It was operated on by Bull, who first performed an exploratory laparotomy in order to ascertain if the operation was possible; finding however that the disease was so far advanced that it would be attended with grave risks, he sewed up the abdomen in order to put before his patient its dangers. The operation was performed in April, 1890, and the patient was known to be alive and well, and suffering no inconvenience, in February, 1891. The stomach was cut across about 2 inches from its pyloric extremity, and the duodenum about half an inch below the point to which the disease extended. The open ends were then inverted and stitched up, after which the intestine was fastened to the stomach by means of one of Abbe's catgut rings, and an excellent recovery ensued, though the patient was three hours under the anæsthetic. The pulse was high for four days, but the temperature never rose at all. The portion of intestinal tract removed measured 4¾ inches by 2½.

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(431) Diffused Sarcoma of the Capsule of the Knee-joint.

In the *Beiträge zur klinischen Chirurgie*, Band vii, Heft 1, Professor C. Garrè, of Tübingen, reports an interesting and probably unique case of diffused sarcoma of the serous and ligamentous structures of the knee. The patient, a woman aged 34, died one month after amputation through the thigh, and, on *post-mortem* examination, large and widely diffused secondary deposits were found in almost every region of the body. The diagnosis of the nature of the disease in this case was at first attended with some doubt, as the swollen and pulpy condition of the affected joint was suggestive of tuberculosis. On microscopical examination of the diseased parts after amputation there was found to be diffused round-celled sarcoma of the capsule of the knee-joint with medullary sarcoma of the lower end of the femur. There seems to have been some doubt as to the precise local origin of the disease, but the author is disposed to believe that the growth started in the soft structures of the knee and not in the bone. The soft structures of the joint had been converted into a mass of very thick and firm tissue, and the disease had been so much diffused as to surround and compress the popliteal blood vessels and thus produce œdema of the leg and foot. Before removal of the limb the temperature taken in the rectum had been very irregular and at times high. According to Garrè, inexplicable elevations of temperature at irregular intervals frequently occur in cases of sarcoma of bone. The constitutional disturbances were, it is stated, much more intense in this case than those usually present in cases of localised tuberculous lesion. The patient was very weak and anæmic, and presented all the signs of extreme cachexia.

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(432) The Formation of a Socket in Congenital Dislocation of the Hip.

König (*Wien. med. Presse*, 1891, April 26th, p. 675) gives an account of a method of his own which he described at the last meeting of the German Congress of Surgeons, by which he makes a socket for cases of congenital dislocation of the hip. The plan, he states, first came into his mind from watching the result of osteoplastic operations for the restoration of the nasal bones. The head of the femur is pulled down by means of extension weights for a week or two before operation, so as to stretch as far as possible the structures by which it is attached to the pelvis, and in order to accustom it to its new position. An incision is then made on to the top of the acetabulum, or on to the place where it ought to be, and by means of a chisel one or two thin flaps of bone are separated partially from the outer surface of the ilium, and sutured together so as to form an acetabulum, the periosteal surface

forming the inner wall of the acetabulum. The wound is at once closed and the weight keeps the limb at rest, and prevents any chance of dislocation taking place. When a sufficient time has elapsed to allow of consolidation of the parts, the patient is allowed to get up. In two instances he has been able to witness the results of his operations, by an examination of the parts, as one of his patients has subsequently died from scarlet fever and one from diphtheria.

MIDWIFERY AND DISEASES OF WOMEN.

(433) Giant Fœtus: Cæsarean Section.

DR. R. NEUMER (*Centralbl. f. Gynäk.*, April 25th, 1891) describes a case where a woman, aged 40, bore a giant fœtus. She had already given birth to eleven children, and it appeared that labour occurred a month after term. The abdomen was unusually large, and as the labour made no progress turning was attempted. The child was found to be of enormous size, and could not be extracted, its pelvis sticking fast in the maternal pelvis. An attempt to disarticulate the leg, as a preliminary to evisceration, failed, as the hip could not be reached. The mother being in a critical condition, Cæsarean section was performed, but she sank shortly after the extraction of the child. The child (together with the blood which it had lost in great quantity through the attempt at amputation, so that it was almost bloodless when extracted) weighed nearly 24 pounds.

(434) Defective Development of Genitals.

DR. VON SWIECICKI (*Der Frauenarzt*, April, 1891) was consulted recently by a robust woman, aged 30. She had always been healthy as a child. After the age of 20 the menstrual molimen was noticed every four weeks, and the hands and feet then became swollen to a marked degree. A little blood passed from the anus; at the same time there was nausea and headache. All these symptoms lasted for about four days. Early in January a severe attack of hæmatemesis set in during the presence of the menstrual molimen, and the vomiting of blood recurred four times within a week. Nearly a pint of blood was lost during each attack. On this occasion it was remarkable that the breasts became swollen, which was unusual, though the ordinary œdema of the hands and feet did not occur. The patient was perfectly feminine in mind and in general conformation. The hymen, like the vulva, was normal, but there was an impassable septum above it. After very careful recto-abdominal and recto-vesical exploration it was concluded that the vagina, uterus, and left ovary were entirely absent. A small right ovary could be distinctly defined. Dr. von Swiecicki quotes Klein's case, where the uterus and vagina did not exist, but both ovaries were present. Molimen with epistaxis for two days occurred every three weeks. Œdema of the extremities has been observed in other cases, and may accompany menstruation otherwise normal. Börner refers it to vasomotor disturbances.

(435) Foreign Bodies in the Female Bladder.

PROFESSOR M. STUMPF (*Centralbl. f. Gynäk.*, February 14th, 1891) describes the case of a shopgirl, aged 23, who was under treatment in a hospital for severe cystitis. Dysuria had been severe ever since the period commenced, at 14 years of age. The urine was very fœtid; pus and blood occasionally passed, and the patient had no control whatever over her bladder. Fever was frequent, and evidence of pyelitis was not wanting. Regular catheterism and washing out the bladder with boracic acid were tried for a long while without benefit. Hæmorrhage from the bladder occurred suddenly, and in the bloody urine thin lamellæ of a greyish, greasy, scented material were detected. The urethra was dilated, and the bladder explored. Its walls were found much hypertrophied. After digital exploration, its cavity was washed out; more of the fatty substance escaped, and the end of a white pigeon's feather protruded from the urethra. The symptoms, after the extraction of the feather, all gradually passed away, the incontinence of urine lasting rather longer than the pain and morbidity of the urine. The fatty substance proved to be scented soap or ointment, and it transpired that the patient frequently passed foreign bodies greased with soap into the urethra. The hymen was intact. A woman, aged 42, subject to dysuria, passed the ivory handle of a crochet needle into the urethra in order to facilitate micturition; it slipped into the bladder. The foreign body lay across the bladder, well to the left. The urethra was dilated up to the calibre of a No. 3 Simon's speculum. The bladder was distended with fluid and firm pressure made above the pubes, so as to empty out the fluid in a strong stream. The needle handle then lay antero-posteriorly, and one end, close to the internal orifice of the urethra, was visible; it was extracted with the greatest ease. The handle was over two inches long and a fifth of an inch thick. Although it had lain but a few days in the bladder it was already incrusted.

(436) Fibroma of the Ovarian Ligament.

M. DOLÉRIS (*Bulletins de la Société Obstét. et Gynécol. de Paris*, 1890, p. 21) describes a case of large fibrocystic tumour of the ovarian ligament successfully removed by operation; he noted that it closely resembled the only other recorded case of this kind of tumour, in which Mr. Doran operated. M. Doléris's patient was a married woman, aged 27. Five years before the operation he detected the tumour during pregnancy lying to the right of the uterus. One year later she again became pregnant, and a child was born at term. The tumour appears to have become conspicuously large shortly afterwards. In June, 1889, the patient came again under M. Doléris's care. He diagnosed solid tumour of the right ovary as big as an orange. The patient complained that it had recently begun to grow rapidly. Under complete narcosis the recti contracted, and could not be made to relax; hence diagnosis was no easier than before. The tumour, with the right tube and ovary, was removed. The patient made a good recovery. The tumour sprang from a pedicle over 2 inches long, as thick as the little finger, and attached to the right ovarian (or utero-ovarian) ligament. It was partly cystic; its solid portion had all the characters of a fibromyoma.

(437) Menthol in Hyperemesis Gravidarum.

DR. GOTTSCHALK, of Berlin (*Der Frauenarzt*, March, 1891), used this drug in a severe case. The patient had borne two living children, then aborted at the fifth month, peritonitis following the miscarriage. Five years later she became pregnant, but premature labour had to be induced on account of uncontrollable vomiting, with satis-

factory results. The patient conceived about three months later. At the end of the sixth week vomiting commenced; it was more violent than in the former pregnancy, blood occasionally being ejected. All treatment proved unavailing till menthol was given in the course of the thirteenth week. The prescription was: menthol, 1 part; spirit. vin., 20 parts; aq. dest., 150 parts; one tablespoonful of the mixture every hour. Relief was almost immediate, the vomiting did not return, and the patient was soon able to return to work. Dr. Gottschalk had equally satisfactory results after the use of menthol in a similar case of uncontrollable vomiting in pregnancy. He does not believe that the drug is a panacea, as the causes of hyperemesis are so multitudinous, and menthol may fail in other cases, as other previously successful remedies have failed. Yet menthol is a safe agent, well worthy of trial in future.

(438) Graves's Disease relieved by Removal of Sloughing Fibroid.

Dr. Carl Wettergren (*Centralb. f. Gynäk.*, February 28th, 1891; *Eira*, No. 11, 1890, p. 334) describes a case in which a woman, aged 47, suffered for over two years from a bleeding fibroid as well as from Graves's disease. The anæmia was extreme, apparently secondary to the hæmorrhage, and of the pernicious type. Therapeutic measures were tried for a time with no effect, except that the fibroid was delivered through the os and cut away with Siebold's scissors. It was bigger than a man's fist, submucous, and in parts gangrenous. After the operation the hæmorrhage ceased. The patient became much stronger; the protrusion of the eyeballs and the rapid pulse and palpitations abated to a marked degree.

(439) The Nature of Hæmatosalpinx.

Dr. H. Walter (*Inaugural Thesis*, Giessen, 1890) strongly contests the now prevalent doctrine that hæmatosalpinx almost necessarily implies tubal gestation in a very early stage. He made a series of sections from two cases operated upon at Giessen, and examined them very carefully under the microscope. There was no distinct evidence of tubal pregnancy. He found structures which bore a certain resemblance to chorionic villi. He believed that they were shreds of structureless membrane with dark borders—mere fragments of fibrin in fact. Dr. Walter—in opposition to Orthmann—holds that tubal gestation cannot be diagnosed with certainty, unless at least decidua cells are present. He admits that, in his cases, the etiology was negative, yet, by comparing the history and clinical course of the cases with the microscopic appearances of the sections of the tubes, he feels constrained to insist that the true nature of the disease was hæmorrhage into the tubal canal as a result of catarrhal inflammation of the tube. Hæmatosalpinx may involve grave results, but it does not follow even then that the original cause is tubal pregnancy.

DISEASES OF CHILDREN.

(440) Bulbar Diphtherial Paralysis.

M. Camille Fromaget relates (*Rev. des Mal. de l'Enf.*, April, 1891) a striking example of rapid death during sudden dyspnœa coming on at the commencement of convalescence from diphtheria. Tracheotomy had been performed three days earlier on account of commencing asphyxia due to laryngitis, and the onset of the dyspnœa was so sudden that it was at first attributed to blocking of the tube. He points out that Duchenne, of Boulogne, was the first to attribute death in such cases to a bulbar lesion, and states that Cadet de Gassicourt had encountered 15 cases of "cardio-pulmonary paralysis" in 101 cases of diphtherial palsy; in 5 of these there was generalised paralysis, and in the remaining 10 paralysis of the soft palate. Fromaget's case is therefore unusual, as no paralysis of the palate or any other part was detected when the patient was examined before she had the fatal dyspnœal attack. The necropsy showed no signs of endocarditis, myocarditis, or thrombosis of the heart or great vessels. Clots were present in these organs, but were evidently produced *in articulo*. The dyspnœa in these cases has been attributed to neuritis of the vagus, or inflammation of the bulb, but careful histological examination by Damaschino and others failed to demonstrate any such changes in any cases examined. This failure, together with the extreme rapidity with which the dyspnœa developed in the case he records, leads M. Fromaget to suggest that death was due to the direct toxic action of the diphtherial poison, described by M. Roux and Yersin, on the bulbar centres. Dr. L. G. Guthrie has also given a careful description (*Lancet*, April 18th and 25th) of these dyspnœic attacks. He applies to them the term "bulbar crises." He thinks the crises are most apt to occur in children who after diphtheria become apathetic, have a nasal quality of voice, irregular sighing respiration, loose almost noiseless cough, with mucous accumulation and a rapid pulse. Dr. Guthrie recommends that the cases should be treated by strychnine to stimulate the cardiac and respiratory functions, and atropine to check secretion. In three cases (of which two recovered) he gave these alkaloids in doses of $\frac{1}{150}$ gr. each by hypodermic injections; he suggests that a better combination would be strychnine $\frac{1}{30}$ to $\frac{1}{30}$ gr., with atropine $\frac{1}{125}$ to $\frac{1}{150}$.

(441) Intubation v. Tracheotomy.

Dr. Jerome Anderson, of California (*Occidental Medical Times*, April, 1891), says intubation of the larynx is a simple, easily performed operation. The head should be held erect, and strongly lifted, the epiglottis will then be elevated, and prevented from approximating too closely to the glottis. In this way one of the chief obstacles to rapid intubation will be overcome. The fear that the aperture may be too small to permit the introduction of the tube is a pure chimera; long before this stage is reached a child dies. The danger of pushing loose membrane into the trachea need not be taken into account, because, if the child has reached the exfoliative stage without fatal asphyxia, it will hardly require intubation afterwards; and, in any case, nothing but awkwardness or the use of unwarrantable force could detach or push membrane before the tube. The proper after-treatment depends entirely on the recognition of the dual nature of the disease. Diphtheria of the larynx usually invades this organ some days after its appearance in the fauces, and after the first systemic fever, due to its ptomaines affecting the nervous centres, has partially subsided. Membranous croup is due to reflexion outwardly upon the larynx of a profound impression upon the nervous centres by a common "cold." The treatment of diphtheritic croup after intuba-

tion is simply that of diphtheria; the one absolute essential in the treatment of membranous croup is steam. As to the comparative merits of intubation and tracheotomy, Dr. Anderson says there is absolutely nothing that the cutting operation does which will not be accomplished by intubation better and more surely. A table of 27 cases is given; 14 cases of croup, with 11 recoveries, and 13 of diphtheritic croup, with three recoveries. One case is recorded in which the intubation tube was swallowed, and remained in the intestinal tract fifteen days before being passed *per rectum*.

PHARMACOLOGY AND THERAPEUTICS.

(442) Antipyrin in Pleuritic Effusions.

At a meeting of the Société Nationale de Médecine de Lyon on April 20th (*Lyon Médical*, May 10th, 1891), M. Clément presented a communication on the effect of antipyrin in pleuritic effusions. He said his attention had been called to the subject three years before, and his conclusions were based on observations made in some twenty cases. When a patient comes under his care with signs of pleural effusion he marks the upper limit of dulness with lunar caustic, and can thus note the slightest variation in the amount of the fluid. Whether fever be present or not, he at once administers antipyrin without any other medication whatever. In all cases there was, on the following day or at latest the day after, a marked reduction in the height to which the dulness reached. In some cases the dulness disappeared after forty-eight hours' treatment, and in two or three the fluid was completely absorbed in twenty-four hours. In no case was the effect delayed beyond four days. The dose given was, as a rule, 6 grammes a day, 1 gramme being given every four hours. After absorption of the fluid the treatment should be continued for some days longer, in order to prevent relapse, the daily dose being, however, reduced to 4 grammes. The cases treated by M. Clément included examples of acute pleurisy *a frigore* and latent pleurisy; both forms yielded readily to treatment, the effect being rather more rapid in the latter than in the former. The treatment failed when the effusion was purulent or bloody. In cases in which the whole pleural cavity was filled with fluid, M. Clément did not feel himself justified in trying the antipyrin treatment, but performed thoracocentesis without delay. With regard to the *modus operandi* of the remedy, he says that even when resolution was almost immediate, nothing like diuresis took place, the amount of urine being increased only from 100 to 200 grammes in the twenty-four hours. In some patients no diaphoresis was observed; in others it occurred after resolution had taken place. Resolution occurred as rapidly in the non-febrile as in the febrile cases. M. Clément thinks antipyrin has a specific action on nearly all inflammatory processes, and it is to this that he attributes its beneficial effect in pleural effusion.

(443) Chlorine in Phthisis.

Heneage Gibbs and Shurly (*Therap. Gazette*, April, 1891) publish an account of twenty-seven cases of phthisis treated by the inhalation of chlorine gas, and the hypodermic use of iodine, and chloride of gold and sodium. They employ two modes of administering chlorine; the gas may be evolved from chlorinated lime by the addition of dilute hydrochloric acid. In a small apartment, one-half to six drachms of chlorinated lime are spread out on a plate, and one to three drachms dilute hydrochloric acid slowly added. Before the gas is evolved, the atmosphere should be well charged with a spray of saturated solution of sodium chloride, about two ounces being necessary. The spray should be continued while the patient is present. The first sitting may last two minutes, while the subsequent ones may be increased to twenty or thirty minutes; one to four sittings daily are necessary. The other method, preferable for mild cases and for laryngeal phthisis, is the inhalation of chlorine water. It should be mixed with a saturated solution of salt in the proportion of from one-fourth to one-half, and from one-half to two ounces of the mixture may be vaporised at a sitting. The gas is practically irrespirable unless diffused in vapour of chloride of sodium. According to the authors, chlorine inhalations seem to be very efficient in preventing further caseation, as shown by changes in the sputum and the alteration in some of the physical signs. A varying degree of tolerance of the chlorine is observed from time to time. It sometimes causes nausea or vomiting if used too soon after a meal. For the hypodermic injection of iodine and of the chloride of gold and sodium, a syringe with gold or platinum-plated needles is necessary. Owing to chemical action, it requires great attention to keep the syringe in good order. The gluteal region is used for injections, and the solutions are made with glycerine. The iodine is given in doses of one-twelfth to one-half and sometimes to one grain; it causes considerable pain. The gold and sodium chloride is given in gradually increasing doses of one-thirtieth to one-fifth or one-third of a grain daily, and then diminishing to one-tenth of a grain daily. It is painless. It is often good to alternate these, using iodine one day and gold the next. If albuminuria occurs, the iodine must be suspended and the gold alone used. The continuance of large doses of the gold and sodium salt may produce a yellow coloration of the skin. During the administration of iodine the patient usually loses weight, and catarrh of the bladder or intestines may be set up. The temperature also usually increases for a week or ten days, and there may be excessive sweating. The expectoration soon becomes lessened and then watery. Asthmatic symptoms and anorexia may supervene, with heavily coated tongue, dry throat, and diarrhœa, but these symptoms are rare. The majority of patients do best on small doses. After two or three weeks, the iodine and gold and sodium chloride should be used alternately every day or every other day; finally once or twice a week. Iodine cannot be used alone for any great length of time, but the gold and sodium salt can. In all the twenty-seven cases reported there seems to have been improvement.

(444) Tuberculin in Diseases of Children.

The report by Professor Henoch and Dr. Goerne, on the use of tuberculin in the clinic for sick children, in Berlin (*Die Wirk. des Koch'schen Heilmittels: Amtliche Berichte*, 1891), deals with a very small number of cases. The only case distinctly benefited was a boy aged 9 suffering from early pulmonary tuberculosis; in two other cases of phthisis in children, aged 7 and 10 respectively, the treatment was abandoned on account

of the establishment of hectic fever and a deterioration of the general condition, and in one case the occurrence of dyspnœa and cyanosis. In four other cases the injections appeared to have produced at the date of the report no alteration. The remedy was tried in one case of tuberculous meningitis; the child, aged 2¾, was in an advanced stage of the disease; four injections were given and the usual pyrexial reactions occurred; the patient died on the fifth day. The necropsy showed, in addition to the ordinary appearances of tuberculous meningitis, "enormous" hyperæmia of the meninges, and of the grey substance of the brain. The opinion is expressed that in tuberculous meningitis the use of the remedy is not justifiable since it may shorten life. A rash was observed in only one case; it resembled that of scarlet fever. Hyperæmia of the mucous membrane of the mouth and pharynx, causing some pain in swallowing was noticed in several cases.

Heubner, of Leipzig, speaking at the Medical Congress at Wiesbaden (*Deutsche med. Zeit.*, April 27th, 1891), observed that children were less sensitive to tuberculin, in proportion to the body weight, than adults, and that the diagnostic value of the remedy was considerable, since children who were healthy or suffering from other diseases suffered very slight reaction after relatively large doses, while tuberculous children reacted to extremely small doses. Scrofulous keratitis, conjunctivitis, and eczema were remarkably bettered by tuberculin. In children tuberculosis seldom began in the lung, but in the glands (35 per cent.) or bones (42 per cent.); in young children the lungs were generally infected as a secondary process from the glands; pulmonary tuberculosis in them was always severe and unsuitable for tuberculin. In older children tuberculosis might begin in the lungs as with adults, and in them tuberculin might be of use. In tuberculous disease of abdominal glands favourable results had been obtained, and he believed that tuberculous peritonitis offered a good field for future trials.

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(445) Pilocarpin in Œdema of the Glottis.

At the recent meeting (May 4th-5th) of the French Society of Otology and Laryngology, Dr. Suarez de Mendoza, of Angers, related (*Semaine Médicale*, May 6th, 1891) a case in which he was called in to see a young man attacked by serious œdema of the glottis causing suffocative dyspnœa. Tracheotomy had been proposed, but Suarez de Mendoza, seeing that in the middle of the swelling a narrow slit was still visible during inspiratory effort, suggested that pilocarpin, which he had already found successful in two similar cases, should be tried. Three hypodermic injections were given at intervals of twenty minutes, the total amount of pilocarpin administered being 25 milligrammes. Marked relief followed the first injection, and a quarter of an hour after the third the patient was breathing easily and quietly, and was entirely out of danger. In eight days he was quite well.

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(446) Pyoktanin in Malignant Growths.

At a meeting of the Paris Société de Chirurgie on April 29th (*Semaine Médicale*, May 6th, 1891). M. Le Dentu reported the results of some clinical experiments with pyoktanin in the treatment of epitheliomata of different kinds. The drug was tried in five cases, in none of which was any benefit observed. In a case of epithelioma of the eyelid in a man aged 52, frequent applications of pyoktanin were made without any perceptible effect; the tumour was removed, and on examination no modification in the cells was found to have occurred. In the other cases neither applications of 3 to 1 per cent. solutions nor interstitial injections had any effect whatever, except in one case of cancer of the tongue in a woman aged 33, in which a brief period of very slight improvement was followed by rapid extension of the disease. M. Richelot said he had also tried the pyoktanin treatment in a case of recurrent epithelioma of the cheek, in a case of malignant disease of the lower jaw, and in one of cancer of the breast, but in no case had the progress of the disease been checked. In a case of osteosarcoma of the pelvis, which was literally saturated with pyoktanin, 30 parenchymatous injections having been given, no effect was noticed for a long time. Recently, however, a change occurred in the tumour, which shrank by about one-third of its size, and a fistulous opening formed, which gave issue to an abundant discharge, but at the same time the patient's general health seriously deteriorated, and cachexia was becoming established. M. Reclus said he had tried the treatment in two cases of carcinoma, and in each of them the disease was aggravated rather than relieved.

Dr. Willy Meyer, of New York, gives (*New York Medical Record*, April 25th, 1891) a preliminary report of an eight weeks' use of the aniline dyes, especially pyoktanin, in the treatment of inoperable malignant growths. He concludes from observations in eleven cases, four of which are given in detail, that the aniline dyes, applied on the surface of ulcerated growths in the form of ointment or powder (about 1 to 200) or in substance, have a powerful analgesic effect. Parenchymatous injections of pyoktanin solutions (1 in 300), repeated every second day till the fifth day, the dose not exceeding 1½ drachm, were innocuous to the system. Nausea, vomiting, weak and slow pulse, headache, and *malaise*, with slight rise of temperature, occasionally followed the injections. The immediate local effects of the injections were pain, œdema, breaking down of the injected tissue, with giving way of the skin or scar (aseptic necrosis) or breaking down (necrobiosis) with subsequent reabsorption. Infiltration of healthy tissue with neoplasm did not follow the injections in any of Dr. Meyer's cases, and in none of them did the growth spread during the treatment. He says applications of pyoktanin in substance to ulcerated tumours removes the diseased tissue in the shape of dry gangrene. There is, according to him, no suppuration under the eschar on account of the powerful antiseptic qualities of the dye, and consequently no cachexia. Pyoktanin is neither a deodoriser nor a styptic. Meyer adds that it may be advisable to combine the parenchymatous injections and local applications of pyoktanin with the internal administration of aniline dyes. Pyoktanin is not, however, in his experience, well borne by the stomach. Even if further observations show that the aniline dyes do not specifically attack carcinoma and sarcoma, Meyer thinks they will have a decided therapeutical value in cases beyond operation by alleviating pain and checking the extension of the disease.

(447) Nitrite of Amyl in Chloroform Poisoning.

Dr. E. Mammen, of Bloomington, Illinois, reports (*New York Medical Record*, April 25th, 1891), a case of chloroform poisoning successfully treated with nitrite of amyl. He was called to a man who had taken chloroform, and could not be aroused. On reaching the patient's bedside, about half an hour later, Dr. Mammen found him in a profound stupor, the respirations being shallow, and the pulse rapid and feeble. A 3oz. bottle was found in his coat pocket half full of Squibb's chloroform, and it was ascertained that he had purchased three ounces of the drug some two hours before. He had, therefore, apparently swallowed about an ounce and a half. Air was at once freely admitted to the room, and a "pearl" of nitrite of amyl given by inhalation. The effect was immediate. After the lapse of fifteen minutes, the pulse again becoming rapid and feeble, another "pearl" was administered, with the result of deepening the respirations and increasing the strength of the pulse. The same thing was repeated eight or nine times at lengthening intervals. In addition to this, two hypodermic injections of atropine were given, and towels wrung out of cold water were dashed upon the chest. After four hours the patient awoke from stupor, and in another hour was out of danger. Recovery was, however. somewhat slow, and extreme icteric discoloration of the skin persisted for two weeks. In Dr. Mammen's opinion, the man could not possibly have survived but for the administration of nitrite of amyl.

(448) Petroleum in Conjunctivitis.

At the recent meeting of the French Society of Ophthalmology, in Paris (May 4th to 7th), M. Trousseau, of Paris, gave an account of the results he had obtained with petroleum in the treatment of conjunctivitis (*Semaine Médicale*, May 6th, 1891). He had for two years sought for a substitute for nitrate of silver and sulphate of copper, both of which caused violent reaction and acute pain. Among the substances tried petroleum seemed to him the most satisfactory. It was less active than nitrate of silver and sulphate of copper, but had the advantage of causing neither pain nor reaction, and it was perfectly well borne by the most sensitive corneæ. He used crude Caucasian petroleum; its derivatives were less active and sometimes more irritating. It should be painted over the conjunctival surface of the eyelids and the *cul-de-sac* with a soft brush. The applications should be prolonged, and their thoroughness should be proportionate to the condition of the mucous membrane; they should be repeated two or three times a day. In cases of granular conjunctivitis M. Trousseau said he had had good results from thoroughly brushing the mucous membrane with a toothbrush saturated with petroleum. In cases of catarrhal conjunctivitis, applications made twice daily quickly dry the mucous membrane, which soon recovers its natural appearance. In muco-purulent conjunctivitis the effect is not so rapid, and the treatment sometimes fails. In follicular conjunctivitis, and in cases of purulent conjunctivitis when the inflammation is on the decline, petroleum acts extremely well. In granular conjunctivitis the effect of petroleum is variable, but not more so than that of the ordinary remedies; in these cases petroleum may be advantageously used as a preliminary to other treatment. Trousseau recommends the drug particularly for children and "pusillanimous subjects," on account of its causing no pain. He added that experiments made by M. Dubief had shown that petroleum has antiseptic properties of moderate intensity.

(449) Regeneration of Corpuscles in the Oligæmia following Poisoning by Acetylphenylhydrazine (Pyrodin).

Modern research seems to show that in all the infective diseases, both acute and chronic, there is a destruction of the red blood corpuscles, and that the work of regeneration by the blood-forming organs is also interfered with more or less gravely by the same morbific influence, this taking place much more slowly than it does in an otherwise healthy person after loss of blood from hæmorrhage. There is this difference between the two conditions. After loss of blood by hæmorrhage, the total volume of fluid in the vessels is rapidly made up by influx of serum from the lymphatics, and the organism only suffers from a temporary diminution, whereas, after destruction of corpuscles, there is not only loss of hæmoglobin, but the presence in the vessels of a quantity of albuminous matter and pigment, which has become so much foreign matter. This matter becomes gradually collected in the spleen and marrow of bones, which thus have to fulfil both a hæmatopoietic and an eliminative function. It occurred to Professor G. Mya (*Riforma Medica*, April 28th, 1891) that this eliminative function might interfere with the regenerative duties of these organs. To test this he administered to several animals doses of pyrodin—a substance well known to produce destruction of corpuscles—and compared the time necessary for the restoration of the normal corpuscular richness with that required after extraction of blood from similar animals. He found, however, that very little difference occurred in the two cases, and that regeneration was, if anything, somewhat more rapid in the poisoned than in the non-poisoned animals. Some observations carried out in man, in which the action of the drug was carried to a much slighter extent, entirely confirmed the above results. From this it would appear that the original theory is untenable, and that in infectious disease the virus itself exerts some direct injurious action on the reparative functions of the blood-forming organs.

PHYSIOLOGY.

(450) Changes in the Colour of the Skin of Fishes and Frogs.

It is well known that the colour of the skin in many fishes varies with the environment of the animal; for example, a fish is usually lighter in colour when it lives in water where the bottom is light coloured. There can be little doubt that the change of colour is under the influence of the nervous system, and is due to changes in the pigment cells of the skin. Pouchet several years ago showed that section of certain cutaneous nerves in flat fishes resulted in permanent expansion of the processes of the pigment cells in the areas supplied by the divided nerves, so that these skin areas were darker than the rest of the skin. The nerves, it seems, do not pass through the spinal cord, but run in the sympathetic. A. Lode (Beiträge z. Anat. u. Physiol. d. Farbenwechs d. Fische, *Wiener Sitzb. Math. Phys.*, Cl. xcix, Abth. iii) has recently, under Exner's direction in Vienna, investigated this subject, chiefly on the trout. Electrical stimulation by means of induction shocks causes the contraction of the

pigment cells in an amputated fin, so that the latter becomes lighter in colour, and the same result is obtained by stimulating the skin of the intact animal. Tetanus produced by stimulating the cord causes marked pallor of the skin; but cutaneous areas having their nerves previously divided remained dark. If the cord be divided transversely about its middle, and if the stimulating electrodes be applied to the head of the fish, then the tetanus, of course, only involves the upper half of the body, but the decoloration affects the whole skin. After a time the animal regains its normal colour; if now the sympathetic nerve and the vessels accompanying it (aorta and cardinal veins) be divided, and the upper part of the body again stimulated, then in this case the decoloration extends only as far as the tetanus. If the same experiment be made on an animal from which the heart has just been removed the same result follows, showing that the result is not due to anæmia of the posterior part of the body from section of the aorta. The subcutaneous injection of curare causes darkening of the skin. If the aorta be compressed in the abdomen and curare be injected into the front part of the body only the pigment cells of the front part of the body are expanded, that is, this part becomes dark; the tail end, however, retains its colour unchanged. The pigment cells of the curarised skin can no longer be caused to contract by stimulation of the sympathetic nerve, although they still respond to direct stimulation. The pigment cells containing an oily intensely red pigment which are the cause of the bright red spots on the trout, appear to be quite independent of the nervous system, and respond but little, if at all, to direct stimulation. The author has shown that the pigment cells are directly connected with nerve fibres. The experiments of Lister and von Wittich have thrown much light on the causes producing change of colour in the frog. Dutarte (*Comptes Rendus*, c. xi, p. 610) has recently investigated this subject on the edible frog (rana esculenta). Such a frog exposed to white or yellow light rapidly becomes lighter in colour owing to contraction of the pigment cells or chromatophores of the skin; and the same result occurs more slowly with green and red rays, while blue and violet act like darkness, that is, the chromatophores expand their processes and the skin becomes dark. Frogs which have been blinded show the same phenomena, only more slowly. While an intact frog can rapidly accommodate its colour to that of its environment (mimicry), a blinded frog does not do so. The sympathetic nerve affects the chromatophores, and stimulation of the central nervous system produces contraction of the pigment cells, the impulses travelling outwards by the sympathetic fibres, just as in fishes. In this connection we may notice the interesting observations of Zimmermann (Theilung d. Pigmentzellen, *Arch. f. mik. Anat.*, xxxvi, p. 404) on the division of pigment cells, which are in part confirmatory of somewhat similar observations by Flemming. The observations were made on the pigment cells of the peritoneum and tail of salamanders. In the process of division of a pigment cell there are four stages: 1, retraction of the processes, while at the same time the cell becomes globular; 2, division of the nucleus; 3, changes in the distribution of the pigment in the cell; 4, division of the body of the cell. The behaviour of the pigment granules during the process is interesting. Neither in the convolution stage of the mitosis of the nucleus nor in the resting nucleus is there a trace of pigment, but as soon as the monaster stage appears pigment granules appear between the loops of the chromatin substance. In the dyaster stage only the polar areas and the curves of the loops are devoid of pigment, the whole of the pigment being at the equator and between the outer ends of the loops. As the cell contracts at its middle the pigment is gradually divided into two equal parts, the cell divides completely into two daughter cells, and as soon as the nuclei pass into the resting phase processes are thrown out. An excellent plate accompanies the paper.

(431) Influence of the Posterior Roots of the Spinal Nerves on the Excitability of the Anterior Roots.

THIS question has been much discussed and experimented on, and has again been re-examined by Belmondo and Oddi (*Revista Speriment. di Freniatria*, xvi, 3, and *Centralb. f. Phys.*, Bd. v, No. 1, April, 1891). The experiments were made on dogs, and the contractions produced by stimulation of the anterior spinal nerve roots were recorded graphically. When the posterior roots were either divided or paralysed by the application of cocaine there was a decided diminution of the excitability of the anterior or motor roots. When the posterior roots are being divided the fall of the excitability in the anterior roots is preceded by a stage of increased excitability of short duration. The authors are of opinion that from the periphery impulses are continually passing along the sensory nerves into the cord, where they are transferred to the motor fibres, and thus increase the excitability of the latter.

(432) The Vasomotor Nerves of the Retina.

DOYOU (*Arch. de Physiol.*, 3, iii, 1, p. 13, 1891) finds that electrical stimulation of the sympathetic nerve or asphyxia causes dilatation of the retinal blood vessels. The same result occurs when the animal is asphyxiated after section of the sympathetic nerve, so that obviously, besides the sympathetic nerve, there is still some other channel by which the vasodilator impulses reach the retina. This is the fifth nerve. If in a dog the sympathetic nerve be divided, after waiting twelve days until the nerve fibres of the sympathetic are degenerated, then exposure and stimulation of the Gasserian ganglion within the cranium caused dilatation of the retinal vessels, and at the same time redness of the lips and gums.

ANATOMY.

(433) Motor Nerves of the Bladder.

NAWROCKI (*Pflüger's Archiv*, xlviii, p. 335) has investigated the course of the motor nerves of the bladder of the cat. The animal was slightly curarised, and the effect on the bladder observed when the lower spinal nerves were stimulated. The bladder in this animal receives its motor nerves through two channels: (1) some motor fibres leave the spinal cord in the anterior roots of the fourth and fifth lumbar nerves, pass through the rami communicantes into the lumbar part of the sympathetic chain, and then into the superior middle and inferior mesenteric nerves to the inferior mesenteric ganglion, and thence by the hypogastric nerves and hypogastric plexus into the vesical plexus; (2) other fibres pass along the second and third anterior sacral roots into the sacral nerves, and thence to the hypogastric plexus and vesical plexus.